

REMARKS

In the Office Action mailed March 2, 2006 (hereinafter, the “Office Action”), Claims 1-34 were pending for consideration with claims 1-8 and 26-34 being withdrawn from consideration. Of these, Claims 9-25 were rejected as being allegedly obvious under 35 U.S.C. §103(a) over Tuttle (U.S. Pat. No. 3,896,252) or Gedrat (U.S. Pat. No. 4,285,991) in combination with Miller (U.S. Pat. No. 4,668,533).

Amendments and Comments

By the present amendment, Claims 1-8 and 28-34 have been canceled and Claim 35 has been added. Support for new Claim 35 can be found in originally filed claim 7 and page 6, lines 17-20 of the specification. No new matter is added by this amendment. Further, it should be noted that such amendments have been made without conceding the correctness of the rejection, and without prejudice to Applicant’s right to pursue canceled or relinquished subject matter in a future patent application. Therefore, Claims 9-27 and 34 are pending in the present application with Claims 26 and 27 being withdrawn from consideration. With respect to paragraph 3 of the Office Action mailed March 2, 2006, Applicant retains the right to request rejoinder of withdrawn Claims 26 and 27 pursuant to MPEP §821.04 upon allowance of the underlying independent Claim 9.

Rejection Under 35 U.S.C. § 103(a)

Claims 9-25 were rejected as being allegedly obvious over Tuttle or Gedrat in combination with Miller. Applicant respectfully submits that the rejected claims are patentable over the cited references for the reasons set forth below, and requests that the rejections be withdrawn.

Before discussing the § 103 rejections, it is thought proper to restate what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. "The PTO has the burden under § 103 to establish a *prima facie* case of obviousness."

In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). To satisfy this burden, the PTO must meet the criteria set out in MPEP § 706.02(j):

... three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

In order to do this by combining references, the prior art must provide some reason or motivation to make the claimed compositions, *In re Dillon*, 16 U.S.P.Q.2d 1897, 1901 (Fed. Cir. 1990). As aptly stated in *In re Jones*, 21 U.S.P.Q.2d 1941, 1943-44 (Fed. Cir. 1992):

"Before the PTO may combine the disclosure of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art... Conspicuously missing from this record is any *evidence*, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the...art would have been motivated to make the modifications of the prior art necessary to arrive at the claimed (invention)."

An excellent summary of how the prior art must be considered to make a case of *prima facie* obviousness is contained in *In re Ehrreich et al.*, 220 U.S.P.Q. 504, 509-511 (CCPA 1979). There the court states that a reference must not be considered in a vacuum, but against the background of the other references of record. It is stated that the question of a § 103 case is what the reference(s) would "collectively suggest" to one of ordinary skill in the art. However, the court specifically cautioned that the Examiner must consider the entirety of the disclosure made by the reference and avoid combining them indiscriminately.

In finding that the "subject matter as a whole" would not have been obvious in *Ehrreich* the court concluded:

"Thus, we are directed to no combination of prior art references which would have rendered the claimed subject matter as a whole obvious to one of ordinary skill in the art at the time the invention was made. The PTO has not shown the existence of all the claimed limitations in the prior art or any suggestion leading to their combination in the manner claimed by applicants."
(underlining added)

It has been widely recognized that virtually every invention is a combination of elements and that most, if not all, of these will be found somewhere in an examination of the prior art. This reasoning lead the court, in *Connell v. Sears, Roebuck & Co.*, 220 U.S.P.Q. 193, 199 (Fed. Cir. 1983) to state:

"...it is common to find elements or features somewhere in the prior art. Moreover, most if not all elements perform their ordained and expected function. The test is whether the claimed invention as a whole, in light of all the teachings of the references in their entireties, would have been obvious to one of ordinary skill in the art at the time the invention was made."
(underlining added)

In re Sernaker, 217 U.S.P.Q. 1, 5-6, (Fed. Cir. 1983) states a test to determine whether a rejection of an invention based on a combination of prior art elements is appropriate as follows:

"The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings...The board never showed how the teaching of the prior art could be combined to make the invention." (underlining added)

Moreover, in *In re Dow Chemical Co.*, 5 U.S.P.Q.2d 1529, (Fed. Cir. 1988), the court states that both the suggestion and the expectation of success must be founded in the prior art, not in the applicants disclosure as a prohibition on the use of hindsight. The Federal Circuit stated in *In re Carroll*, 202 U.S.P.Q. 571, 572 (Fed. Cir. 1979):

One of the more difficult aspects of resolving questions of non-obviousness is the necessity "to guard against slipping into use of hindsight (citing *Graham v. Deere*). Many inventions may seem obvious to everyone after they have been made... (citation of §103)... Thus, in deciding the issue of obviousness, we must look at the prior art presented from a vantage point in time prior to when the invention was made, and through the eyes of a hypothetical person of ordinary skill in the art.

With the above background in mind, applicants contend that the Patent Office has failed to meet its burden of making a *prima facie* case of obviousness. The Office has failed to show that the cited references together teach each and every element of the present claims nor do the asserted references provide sufficient teachings or motivation to combine in order to arrive at applicant's invention. Further, applicants contend that the combination of references is based on hindsight. Therefore, without knowledge of the disclosure of the present invention, one of ordinary skill in the art would not be able to make the combination of either Tuttle or Gedrat and Miller to arrive at the claimed invention.

As an initial observation, the combination of Tuttle or Gedrat and Miller requires at least five (5) separate modifications or steps to arrive at the invention claimed by the Applicant. Specifically,

first, the combination of these references must first be made based on some motivation. Second, the particular classes of materials must be chosen from among the many identified alternatives. Third, the specific teaching of Tuttle must be modified to arrive at a single “palladium aliphatic amine complex.” Fourth, this modified complex must be further modified such that it is made ink-jettable. Fifth, these modified compositions being applied to the substrate are then heated. None of these steps are taught, suggested, or would be motivated by the teachings of either reference.

In a similar circumstance, the CCPA found that substantial reconstruction and modification of cited references was not an acceptable basis for an obviousness rejection. Specifically, the court stated “We, therefore, find that Chinnery et al. did not teach the shaft sealing art how to solve the problems which existed in that art at the time of appellant's invention. . . . This suggested combination of references would require a substantial reconstruction and redesign of the elements shown in Chinnery et al. as well as a change in the basic principles under which the Chinnery et al. construction was designed to operate. . . . when viewed as of the time appellant's invention was made, and without the benefit of appellant's disclosure, we find nothing in the art of record which suggests appellant's novel oil seal.” *In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. 349 (C.C.P.A. 1959).

Specifically, the Tuttle reference fails to supply a motivation to combine its teachings with any non-coating related references, much less an ink-jet reference such as Miller. The Tuttle reference is related to processes for forming metal plating on plastics. See Title and col. 1. The entire disclosure of Tuttle refers to achieving uniform coatings of metal over an entire surface of plastic materials. It is well known in the industry that such metallization of plastics is used for

decorative or film barrier applications and can include aesthetic effects such as decoration, shimmer, etc., barriers to permeation of gases or liquids through the material and the like. This is illustrated by the fact that the disclosure and examples all teach immersion plating baths to achieve the stated metal coatings. See col. 4, lines 11-17. Those skilled in the art would fail to find any motivation to use the teachings of Tuttle in an ink-jet environment.

The Examiner has responded previously by citing case law regarding sources of motivation. However, the Examiner provides no such specific motivation and merely speculation regarding what someone skilled in the art would consider obvious. See *In re Jones* quotation above. In contrast, Applicant asserts that the cited references provide no such motivation and those skilled in the art would not combine or modify the references to arrive at the claimed invention. Specifically, coatings of large surface areas versus printing of features such as electrical circuits are significantly different matters and endeavors. For example, ink jetting to achieve a solid coating would be a highly inefficient process, so much so that the subject matter of the Tuttle patent would not lead someone to ink jet printing of small features and patterns such as printed circuits. In fact, such desires for coating large areas would lead someone skilled in the art away from ink-jet or most other printing technologies.

Further, the Tuttle patent provides an apparently improved manner in which such electroplating can be performed on plastic materials. However, the plastic materials require special preparation. Specifically, Tuttle states that “essential to the invention is the use of a rubber modified thermoplastic polymer...[otherwise] the benefits of this invention are not obtained.” Col. 2, lines 14-

19. The substrates of the present invention do not require any such special formulation. Substantial adhesion to the substrate is not necessarily required in the claimed invention. Therefore, those skilled in the art would not be motivated to consider such a process or its materials in ink-jet printing.

Assuming that the combination of Tuttle and Miller were appropriate, which point we do not concede, the combination would still fail to render the claimed invention obvious. Tuttle fails to provide a motivation to modify the compositions in the manner claimed by the Applicant. Specifically, as a second step, one must choose from among the many components listed to arrive at an aliphatic amine aminating solution and a separate noble metal salt solution, i.e. palladium chloride. This requires choosing the palladium salt from among a list of alternatives. Further, this requires selecting an aliphatic amine which would complex with the palladium cation. However, neither the Tuttle nor the Miller reference teaches providing such an aliphatic amine which is designed to complex with the palladium. Pursuant to Tuttle, the surface first requires amination “with a solution of ethylenediamine or 1,3-diaminopropane.” Col. 3, lines 10-11. This is not a complexing species, but rather an aminating agent for modifying an unconventional substrate, e.g. thermoplastics. The Examiner has failed to provide any specific motivation either explicitly in the references or reasons why someone skilled in the art would make such a modification absent the teachings of the Applicant’s invention.

Assuming that the above step can be made, which point we do not agree, a third step of combining the aminating solution and palladium metal salt prior to application to the substrate would

be required. As mentioned before, the claimed invention requires a “palladium aliphatic amine complex” as an ingredient in the ink-jettable composition, i.e. prior to deposition on the substrate. Applicant recognizes the Examiner’s statement regarding a reasonable expectation of success. However, this blanket statement fails to recognize the prerequisite motivation to do so.

Further, Applicant asserts that the Tuttle reference specifically teaches separate steps due to the fact that the substrate is specially prepared. Thus, the aminating solution is designed to react with and improve adherence to the substrate. The presence of a metal cation such as palladium would interfere with this by complexing or otherwise associating with the amine components. Without this separate step, adherence would be reduced and the stated objectives of improving adherence would be impeded. Thus, the Tuttle reference would be incompatible with the suggestion that the aminating solution be combined with the metal salt prior to deposition for at least the reason that the aminating solution would no longer react with the substrate in the same manner. Therefore, the motivation of the references actually teaches away from the claimed invention. No such modification would be suggested nor would one skilled in the art be motivated to modify the disclosed separate treatment solutions in such a manner as to arrive at the claimed invention.

As a fourth step, the above modified solutions would then need to be made ink-jettable. As asserted above, the Tuttle reference teaches away from such a modification. Also, there is no motivation provided in Miller to retain the amine component when formulating an ink-jet composition, especially since such is taught as a separate solution from the palladium component in the Tuttle reference.

Fifth, the compositions applied to the substrate must then be heated in accordance with the claimed invention. Neither Tuttle nor Miller teaches or suggests such a heating step. Each reference teaches that, for their respective purposes, satisfactory results are achieved with no mention of heating. Although the Examiner has asserted that similar success would be expected with heating, the Applicant disagrees with this assessment. There would be no motivation to do so since acceptable results were obtained in the absence of heating which would entail unnecessary extra cost and potential damage to materials. Thus, the references fail to provide any motivation to make the extra step of heating. Regardless, the addition of heating is only one of at least five steps required to arrive at the claimed invention through significant “reconstruction” and modification of the cited references.

Further, the Gedrat reference fails to remedy any of the above defects. Specifically, Gedrat discloses using palladium complexes to activate an entire copper coated plate as a complete coating. The Examiner points to disclosure in Gedrat regarding printing using screen or photo printing. However, as can be seen from the specification and especially Examples 3 and 4, the use of screen printing is reserved for either negatively or positively masking the desired circuit pattern prior to etching in order to form the circuit. Thus, Gedrat is very similar to Tuttle in that the palladium materials are exclusively used in preparing a coating over an entire surface. Thus, Gedrat fails to aid in establishing a *prima facie* case for at least the same reasons as Tuttle.

The Applicant further submits that the current rejections are based on indiscriminate combination of references using impermissible hindsight. At the time Applicant filed the present

application, none of the references would have suggested the invention as claimed. Tuttle is a reference teaching immersion plating to form coatings of plastic materials while Miller and Gedrat are very different approaches at forming electronic circuits. Applicant has discovered that ink-jetting of a specific class of palladium aliphatic amine complexes which are subsequently reduced can be highly useful in forming conductive pathways and circuits. It appears that the cited references have been assembled and significantly modified using Applicant's own specification as a roadmap to arrive at the claimed invention rather than identifying independent sources of motivation for doing so.

Further, with respect to new Claim 35, nothing in any of the cited references teaches or suggests providing non-complexed amine as part of the first liquid vehicle. Similarly, none of the cited references, either individually or in combination teach or suggest the specific aliphatic amines as part of a palladium complex as identified in Claim 16.

In light of the above comments, Applicant respectfully submits there is no suggestion or motivation to combine and modify the Tuttle and Miller references in a manner sufficient to arrive at the claimed invention. Further, Applicant asserts that the above rejections are based on impermissible hindsight. As such, a *prima facie* case necessary to support a § 103 rejection was not established. Accordingly, Applicant respectfully requests that the rejections be withdrawn and the claims be passed to issue.

CONCLUSION

In view of the foregoing, Applicant believes that Claims 9-25 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone Don Coulman at (541) 715-1694 to address such issues as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 30th day of June, 2006.

Respectfully submitted,



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